

What is claimed is:

1.(amended) A threading control method for moving a cutting tool and a workpiece in synchronicity with rotation of a main spindle to machine thread grooves in the workpiece, the threading control method comprising:

a step of computing the present position of the main spindle,

a step of generating a main-spindle position-correction amount in order to make a single-rotation reference signal of the main spindle synchronous with a control cycle, based on the single-rotation reference signal of the main spindle and the computed present position of the main spindle, and of correcting, by this main-spindle position-correction amount, the position of the main spindle so that the single-rotation reference signal of the main spindle and the control cycle are synchronized,

15 a step of confirming the synchronization of the control cycle with that of the single-rotation reference signal of the main spindle whose position has been corrected, and

a step of outputting a command to a threading spindle when the main-spindle single-rotation reference signal and the control cycle 20 are synchronized.

2. The threading control method as recited in claim 1, wherein the main-spindle position is corrected in a direction in which the main-spindle rotational frequency decreases.

3.(amended) The threading control method as recited in claim 1,
wherein when the deviation between the main-spindle single-rotation
reference signal and the control cycle are below a prescribed value, and the
5 rotational frequency of the main spindle is below a designated value, then
the position of the main spindle is corrected in a direction in which the
rotational frequency of the main spindle increases.

4. The threading control method as recited in claim 1, wherein the
10 main-spindle position correction is computed to be below a main-spindle
maximum correction, in order that variations in the main-spindle rotation
be within a prescribed variation range.

5. The threading control method as recited in claim 1, wherein the
15 main-spindle position correction includes a threading start angle.

6.(amended) A threading control apparatus for moving a cutting tool
and a workpiece in synchronicity with rotation of a main spindle to
machine thread grooves in the workpiece, the threading control
20 apparatus comprising:

a main-spindle position-computation means for computing the
present position of the main spindle,
a main-spindle position-correcting means for generating a

main-spindle position correction amount in order to make a single-rotation reference signal of the main spindle synchronous with a control cycle, based on the single-rotation reference signal of the main spindle and the present main-spindle position computed by the 5 main-spindle position computation means, and of correcting, by this main-spindle position correction amount, the position of the main spindle so that the single-rotation reference signal of the main spindle and the control cycle are synchronized,

10 a threading-spindle interpolation start detection means for confirming the synchronization of the control cycle with that of the single-rotation reference signal of the main spindle whose position has been corrected, and

15 an interpolation means for each spindle for outputting a command to the threading spindle when the main-spindle single-rotation reference signal and the control cycle are synchronized.

7.(amended) The threading control apparatus as recited in claim 6, wherein the main-spindle position-correcting means corrects the 20 main-spindle position in a direction in which the rotational frequency of the main spindle decreases.

8. (amended) The threading control apparatus as recited in claim 6, wherein when the deviation between the main-spindle single-rotation reference signal and the control cycle is below a prescribed value, and the rotational frequency of the main spindle is below a designated value, then 5 the main-spindle position-correcting means corrects the main-spindle position in a direction in which the rotational frequency of the main spindle increases.

9. (amended) The threading control apparatus as recited in claim 10 6, wherein the main-spindle position-correcting means computes the main-spindle position correction to be below a maximum correction amount, in order that variations in the main-spindle rotation be within a prescribed variation range.

15 10. (amended) The threading control apparatus as recited in claim 6, wherein the main-spindle position correction computed by the main-spindle position-correcting means includes a threading start angle.